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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,196	07/15/2003	Scott Robert Summerfelt	TI-35853	8668
23494	7590	04/21/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			TRAN, THIEN F	
P O BOX 655474, M/S 3999			ART UNIT	
DALLAS, TX 75265			PAPER NUMBER	
			2811	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,196

Applicant(s)

SUMMERFELT ET AL.

Examiner

Thien F. Tran

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,7-9,14,15 and 17-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6,10,13 and 16 is/are rejected.
- 7) ☒ Claim(s) 2,11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07/15/2003</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of species 1 represented by Figure 2A with claims 1-3, 6, 10-13 and 16 in the reply filed on 01/13/2005 is acknowledged. The traversal is on the ground(s) that no claims associated with species 2 are elected and species 2 is an obvious variant of species 1. This is not found persuasive because it is well settled that species are required to be restricted if it is shown that all species are distinct. It is clearly established that species are in fact distinct in Paper Mail date 12/07/2004 and the contact 136 in species 1 is square shape while the contact in species 2 is a circle.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

Claim 2 is objected to because of the following informalities: line 6, "corner the ferroelectric" should be --corner of the ferroelectric--. Appropriate correction is required.

Claim 11 is objected to because of the following informalities: line 5, "corner the ferroelectric" should be --corner of the ferroelectric--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6, 10, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotaki (JP 5-29579) in view of Cerva et al. (USPN 6,790,676).

Kotaki discloses a memory array (Figures 1 and 3), comprising a plurality of memory cells accessible along a plurality of bitlines using a plurality of plate signals and a plurality of wordline signals for storing data, the memory cells individually comprising: a capacitor formed in a capacitor layer above a semiconductor body 26; and a cell transistor comprising first and second source/drains 23 formed in an active region 15 of the semiconductor body, the active region extending along a first axis in the semiconductor body, the first source/drain being electrically coupled with the capacitor; a second source/drain formed in the active region, the second source/drain being electrically coupled with a bitline structure; and a gate 24 electrically coupled with a wordline structure 12 that extends along a second axis, wherein the first axis and the second axis are oblique.

Kotaki does not expressly disclose the capacitor could be a conventional ferroelectric capacitor. Cerva et al. discloses a ferroelectric capacitor comprising a ferroelectric material between the electrodes of the capacitor. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to form the capacitor of Kotaki as a ferroelectric capacitor comprising a ferroelectric material between the electrodes of the capacitor as taught by Cerva et al. so that the stored information is not lost but remained stored even in the event of an interruption in the voltage or current supply.

Regarding claims 3 and 13, the active region 15 is straight.

Regarding claims 6 and 16, the first axis passes through first and second ends of the active regions in the array.

Allowable Subject Matter

Claims 2, 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims:

The following is a statement of reasons for the indication of allowable subject matter: prior art references do not teach or render obvious a ferroelectric memory device having its structure arranged as recited in claim 2 and claim 11.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F. Tran whose telephone number is (571) 272-1665. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/620,196

Page 5

Art Unit: 2811

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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April 15, 2005


THIENTRAN
PRIMARY EXAMINER